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Pseudomonas Bloodstream Infections Associated with a Heparin/Saline Flush — Missouri, New York, Texas, and Michigan, 2004–2005

On January 26, 2005, CDC was notified of four cases of *Pseudomonas fluorescens* bloodstream infection among patients at an oncology clinic in Missouri. All patients had received a heparin/saline flush to prevent clotting of indwelling, central venous catheters. The flushes were preloaded in syringes by IV Flush and distributed by Pinnacle Medical Supply (Rowlett, Texas). On January 31, a nationwide alert against use of all heparin or saline flushes preloaded in syringes by IV Flush was issued by the Food and Drug Administration; the company recalled these products. As of February 15, state and local health departments and CDC had identified a total of 36 *Psuedomonas* species infections in patients in four states who were administered the heparin/saline flushes from multiple lots. This report describes the ongoing investigation and provides recommendations for investigation and management of potential cases.

Missouri

During December 29, 2004–February 1, 2005, a hospital physician diagnosed nine cases of *P. fluorescens* infection; eight were in patients at an oncology clinic, and one was in a patient hospitalized with sickle cell disease. Median age of the nine patients was 57 years (range: 32–72 years). Of the eight patients with cancer, three (38%) had received stem-cell transplants within 6 months of infection. All nine patients had long-term, indwelling, central venous catheters and had received heparin/saline flush prepared by IV Flush, usually in 10 mL syringes. Patients had either fever or fever and chills within 2–26 days after their catheters were flushed. Blood cultures drawn through the catheters grew *P. fluorescens*; simultaneous, peripheral blood cultures did not grow the organism. In one patient, a tissue sample from the area surrounding the catheter grew *P. fluorescens*. In addition, cultures of unopened heparin/saline syringes from IV Flush grew *P. fluorescens* in the laboratory of the hospital. Catheters were removed, and the patients were treated with intravenous and/or oral antibiotics; all patients recovered from their infections.

New York

On February 4, 2005, a hospital notified the New York City Department of Health and Mental Hygiene (NYCDOHMH) and the New York State Department of Health (NYSDOH) of six cases of *P. fluorescens* infections in children with central venous catheters. All six patients had received heparin/saline flush, preloaded in syringes by IV Flush. NYSDOH and NYCDOHMH immediately alerted providers and laboratories and asked them to perform surveillance for cases of bacteremia or sepsis with *P. fluorescens* and to submit isolates to their public health laboratories for confirmation and molecular typing. Surveillance of cases during December 13, 2004–February 8, 2005, resulted in identification of 12 cases of *P. fluorescens* infections. All 12 patients were children; median age was 9 years (range: 8 months–18 years). All 12 had long-term, indwelling, central venous catheters and had been

INSIDE

272 Varicella-Related Deaths — United States, January 2003–June 2004
274 Varicella Surveillance in Public Elementary Schools — Multnomah County, Oregon, 2002–2004
276 Progress Toward Poliomyelitis Eradication — Afghanistan and Pakistan, January 2004–February 2005
279 Elimination of Rubella and Congenital Rubella Syndrome — United States, 1969–2004
283 QuickStats
284 Notices to Readers

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administered heparin/saline flush, preloaded in syringes by IV Flush. Blood cultures were obtained through the catheters in 10 patients (83%) and from peripheral sites in three patients (25%). Of the 12 patients, 10 (83%) had cancer, one had cystic fibrosis, and one had an X-linked immunodysregulatory disease. All the patients had fever, and three (25%) had hypotension. Nine (75%) were admitted to the hospital for treatment with intravenous antibiotics, and one required admission to the intensive care unit for management of hypotension; seven (58%) had recurring febrile episodes. All 12 patients were treated with antibiotics; six (50%) patients also required catheter removal. All 12 patients recovered. Cultures of unopened heparin/saline syringes from IV Flush grew *P. fluorescens* in the New York State Public Health Laboratory.

Texas

During December 12, 2004–February 5, 2005, physicians diagnosed 14 *Pseudomonas* species bloodstream infections (11 *P. fluorescens* and three unknown *Pseudomonas* species) among patients in one hospital. The 14 patients had been admitted for various conditions, including seizure, colon cancer, pneumonia, urinary-tract infection, and sepsis. Median age of the patients was 50 years (range: 16 days–86 years). All patients had either short- or long-term, indwelling, central venous catheters and had received heparin/saline flush prepared by IV Flush. In all cases, the *Pseudomonas* species were recovered from peripheral blood cultures. All patients had fever during their hospital stays; all were treated with intravenous antibiotics, and peripherally inserted central catheters and central venous lines were removed. Thirteen (93%) of the patients recovered; one infant remained hospitalized as of March 22, but the continued hospitalization was not related to the infection. Cultures of unopened heparin/saline syringes from IV Flush grew *P. fluorescens* in the hospital laboratory. Pulsed-field gel electrophoresis (PFGE) testing at the Texas State Public Health Laboratory revealed that isolates from eight patients and an unopened heparin/saline syringe from IV Flush were indistinguishable by one enzyme.

Michigan

In January 2005, a patient with a chronic, indwelling, central venous catheter had onset of chills and fever several hours after the catheter had been used during a surgical procedure. The patient had received a heparin/saline flush, prepared by IV Flush, at a local clinic during the preceding week. Blood cultures were obtained through the catheter and grew *P. fluorescens*. The patient was treated with antibiotics and recovered.

Investigation of IV Flush

A trace-back investigation by state and local health departments and CDC determined that IV Flush was the source of the heparin/saline flush administered in preloaded syringes to all patients with *P. fluorescens* infections. To produce its heparin/saline flush, IV Flush ordered heparin powder and sent it to a compounding pharmacy, where a concentrated heparin solution was made. This concentrated solution was then returned to IV Flush, where it was added to bags of saline solution, from which the syringes were filled. Sterility testing of the concentrated heparin solution by IV Flush was reportedly not performed. After discovering that the heparin/saline flush was contaminated, the physician in Missouri informed IV Flush and the Missouri State Department of Health and Senior Services. The state health department notified CDC, which notified FDA, and IV Flush subsequently initiated a nationwide recall. On January 31, 2005, FDA issued an alert against use of the flush and subsequently issued an updated alert on February 4 (*1*).

Samples of unopened heparin/saline flush syringes were sent to CDC, where bacterial cultures of seven of nine lots grew *P. fluorescens*. CDC also plans to conduct PFGE tests on isolates from all four states; as of March 22, the only molecular typing results were from the Texas State Public Health Laboratory. Information obtained by FDA indicated that the heparin/saline flush might have been distributed to locations in as many as 17 states during the preceding year. CDC continues to work with state and local health departments and FDA to ensure that heparin/saline syringes from IV Flush are no longer in use in these locations and to search for additional cases.

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Editorial Note: The findings from this ongoing investigation indicate that heparin/saline flush, preloaded in syringes by IV Flush, was contaminated with *P. fluorescens* during commercial preparation and administered to multiple patients in at least four states. Exposure to the contaminated flush has been associated with infections in 36 patients; additional potential cases are under investigation. Most of the patients had serious underlying medical conditions and subsequently had bloodstream infections; many required hospitalization and surgical removal of long-term, indwelling, catheters. CDC, FDA, and state and local health departments continue their efforts to ensure that the recalled syringes are no longer being used.

P. fluorescens is a member of the fluorescent pseudomonad bacteria group and is an infrequent cause of blood stream infections. Optimal temperature range for growing the organism is 77°F–86°F (25°C–30°C); *P. fluorescens* can be difficult to grow when samples are incubated at 98.6°F (37°C), the temperature at which most bacterial cultures are incubated in hospital microbiology laboratories (*2*). Depending on laboratory capabilities, identification of *P. fluorescens* can be difficult; therefore, patients who received the heparin/saline flush and were infected with unidentified *Pseudomonas* species were included in the case count in this report.

FDA is investigating the source of contamination in this outbreak, which might have occurred either at IV Flush or at the compounding pharmacy that prepared the heparin solution. Preparation of drug products to fill prescriptions for specifically designated patients is considered pharmaceutical compounding, not manufacturing. However, companies that prepare products not requested by a prescription are considered manufacturers and should follow requirements set forth by FDA regulations on good manufacturing practices (*3*). These regulations help ensure the sterility of products intended for injection and include requirements for measures such as validation of sterilization techniques and sterility testing of finished products. In this case, sterility testing of the finished product was reportedly not performed. Had it been done, the contamination that led to this outbreak might have been detected before the product was distributed.

Contaminated products prepared in compounding pharmacies have also been implicated in previous clusters of infections, including *Exophiala dermatiditis* joint infections caused by injectable steroids (*4*); *Chryseomonas* and *Serratia* species infections, resulting in meningitis from epidural injections

(CDC, unpublished data, 2002; Contra Costa Health Services, unpublished data, 2002); and *Burkholderia cepacia* blood stream infections from intravenous flush (CDC, unpublished data, 2004). Regulatory oversight of compounding pharmacies varies among states. However, compounding pharmacies are subject to inspection by pharmacy boards, FDA, and accreditation organizations. The American Society of Health-System Pharmacists and the U.S. Pharmacopeia have developed guidance and standards that address quality assurance and sterile preparation of compounded products (*5,6*). In addition, in May 2004, the Pharmacy Compounding Accreditation Board (PCAB) established a task force to set standards for a voluntary accreditation board for compounding pharmacies (*7*).

Companies that manufacture products intended for injection should follow FDA regulations for ensuring the sterility of these products (*3*). Health-care providers who detect cases of *Pseudomonas* species infection in patients with central venous catheters are urged to determine whether their patients received the heparin/saline flush recalled by IV Flush. Although the product has been recalled, cases have occurred up to 1 month after receipt of the product. Indwelling, intravenous catheters that are used infrequently can become colonized with organisms in a biofilm, and symptoms might not develop until the catheter is used. Susceptibility patterns of organisms isolated from the 36 identified patients have varied, with multiple isolates resistant to third-generation cephalosporins and carbapenem antibiotics. Treatment for potential patients should include targeted antimicrobial therapy and consideration of removing their catheters (*8*). In addition, cases that might be related to use of this product should be reported to state and local health departments, CDC, and the FDA MedWatch program (http://www.fda.gov/medwatch/report.htm or 1-800-FDA-1088, press 0).

Acknowledgment

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Varicella-Related Deaths — United States, January 2003–June 2004

During 2003 and the first half of 2004, CDC received reports of eight varicella-related deaths. The age of the decedents ranged from 1 to 40 years. Six of the eight deaths occurred among children and adolescents aged <20 years. The cases were reported from Arizona (two), Maryland (two), Arkansas (one), New Hampshire (one), Ohio (one), and New York City (one). Six deaths occurred in unvaccinated persons. Vaccination status of the remaining two persons could not be determined. This report describes clinical data for three of the fatal varicella cases in children, reported from Arizona, Arkansas, and New York City; all three patients were susceptible and unvaccinated, but otherwise healthy. The three other children and adolescents, not described in detail in this report, were immunocompromised as a result of at least one preexisting condition. The findings in this report underscore 1) the importance of timely routine vaccination of children aged 12–18 months and catch-up vaccination of older susceptible children and adolescents according to current recommendations (*1,2*) and 2) the need for timely and complete national varicella death surveillance.

Case Reports

Case 1. In October 2003, an unvaccinated male aged 12 years with no history of varicella disease had a rash consistent with varicella. Approximately 2 weeks before, he had been exposed to an unvaccinated classmate with varicella. Three days later, the child was taken to an emergency department (ED) because of repetitive episodes of vomiting, shortness of breath, and weakness. On examination, the patient was afebrile, and his pulse oximetry was initially 97%. However, after he was admitted to a room, his pulse oximetry decreased

to 69%. He was placed immediately on a nonrebreather mask and, subsequently, his pulse oximetry increased to 99%. In addition, he had numerous purple-tinged, vesiculopustular lesions in various stages of development, consistent with varicella with hemorrhagic complications. A chest radiograph revealed that his lungs were clear. Intravenous (IV) fluids were started, but he soon had a seizure and became apneic. Cardiopulmonary resuscitation was started, but the child died on the second hospital day. Viral cultures and varicella laboratory testing were not conducted. An autopsy was not performed. Diagnosis was based on clinical description and history of exposure.

Case 2. In January 2004, an unvaccinated female aged 10 years with no history of varicella disease had a rash on her abdomen, chest, and back, consistent with varicella. The child had been exposed to several classmates with varicella. Ten days later, she was taken to an ED because of ataxia and changes in mental status. On examination, she had a fever of 103.1°F (39.5°C), and her neurologic assessment revealed a Glasgow coma score of 9/15. Her eyes opened spontaneously; she was reactive to pain, but could not talk. IV acyclovir, ceftriaxone, vancomycin, and immunoglobulin were started. The patient experienced respiratory failure; she was intubated and transferred to a children's hospital for continued management.

On the third day of hospitalization, her mental status deteriorated. She had no withdrawal to pain or deep tendon reflex, did not blink eyes on command, and began to experience seizures. On the fourth hospital day, the patient had brain death diagnosed on clinical examination; she was pronounced dead on the following day. Laboratory results were positive for varicella zoster virus infection with both IgM assay and polymerase chain reaction. Blood cultures for bacterial agents were negative. An autopsy was not performed.

Case 3. In March 2004, an unvaccinated female aged 14 months with no history of varicella disease had a rash on her face and back, which eventually spread to her abdomen and chest. The source of exposure could not be identified. Three days later, she had vomiting, diarrhea, and reduced oral intake. Two days later, she was taken to an ED because she became cold to touch and too weak to walk. At the ED, she had fever of 102.0°F (38.9°C) and was hypotensive, with a blood pressure of 54/44. Varicella and septic shock were diagnosed. She received fluid resuscitation, IV ceftriaxone and vancomycin, and acetaminophen for fever control. She was transferred to a children's hospital, where her condition deteriorated. Despite aggressive treatment, she had respiratory and cardiac arrest and died less than 1 hour after arriving at the hospital. Blood cultures for bacterial agents were negative. Further serologic tests, chest radiograph, and an autopsy were not performed. Diagnosis was based on the clinical description of the case.

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Editorial Note: The three cases described in this report demonstrate that varicella can be fatal and that some deaths among healthy children continue to occur despite availability of a safe and effective varicella vaccine. Varicella vaccination is >95% effective against severe disease and, since 1996, has been recommended for routine administration to children aged 12–18 months and to all susceptible persons aged ≥13 years (*1,2*).

For children aged 19–35 months, national estimates of varicella vaccination coverage increased from 26% in 1997 to 85% in 2003 (*3*). With the increase in vaccine uptake, substantial reductions in varicella morbidity and mortality have occurred. In the two Varicella Active Surveillance Project (VASP) sites (Antelope Valley, California, and West Philadelphia, Pennsylvania) during 1995–2003, the number of reported varicella cases declined by approximately 85%, and varicella hospitalization rates declined by approximately 70% (*4*; CDC, unpublished data, 2004). In Illinois and Michigan, two states with passive surveillance and annual varicella reporting to CDC, the average number of reported varicella cases had declined 87% in both states in 2003 (3,823 cases in Illinois and 4,171 cases in Michigan), from the average incidence in those states during 1993–1995 (28,378 average number of cases in Illinois and 33,177 average number of cases in Michigan) (CDC, unpublished data, 2004). On the basis of reports received by CDC's National Center for Health Statistics (NCHS), varicella deaths declined 78% for all age groups during 1999–2001 (N = 118), compared with 1990–1994 (N = 525) (*5*).

Some providers might consider delaying vaccination until age ≥15 months on the basis of publications suggesting lower vaccine effectiveness among children vaccinated before that age (*6,7*). However, this has not been a consistent finding; other studies have not indicated age at vaccination as a risk factor for vaccine failure (*8,9*). As exemplified in the death of the child aged 14 months, timely vaccination is important, and vaccination should not be delayed.

In addition to routine vaccination of young children, in 1999, the Advisory Committee on Immunization Practices recommended implementing requirements for child care and school entry to help ensure that children do not reach adolescence or adulthood without varicella immunity (*10*). By June 2004, a total of 44 states had implemented elementary school or child care entry requirements for varicella vaccination. How-

ever, these measures alone are not sufficient. Middle- or high-school entry requirements are needed to cover cohorts of children enrolled in school before implementation of the child care and elementary school requirements. As of March 23, 2005, only 18 states had included middle- or high-school entry requirements for varicella vaccination. One death (case 2) described in this report occurred in a state with elementary school and child care requirements, but no middle- or high-school entry requirements. To prevent cases and deaths in older children and adolescents, states that do not have a policy in place should consider requiring evidence of varicella immunity for children entering middle and high school.

In 1999, the Council of State and Territorial Epidemiologists (CSTE) required states to report varicella-related deaths to CDC's National Immunization Program (NIP). During 1999–2001, a total of 27 varicella-related deaths were reported to NIP, compared with 118 reported to NCHS. Completeness of reporting of varicella deaths to CDC needs to be improved. However, important detailed case investigation information such as history of disease, potential risk factors, and laboratory test results are supplied by the death reports submitted to NIP. Continued and improved surveillance of varicella deaths will help to monitor the vaccination program.

Despite 85% national coverage, varicella vaccination coverage rates vary by state. In 2003, vaccination coverage in states among children aged 19–35 months ranged from 67% to 93%, with 28 states reporting vaccination coverage levels <85% (*3*). Families and health-care providers of all children are advised to ensure vaccination of children who do not have reliable history of varicella disease. Continued public health efforts in implementation of routine and catch-up vaccination will ensure that children are protected from disease during childhood and do not enter adulthood without immunity, when disease is more severe and the risk for death is greater.

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Varicella Surveillance in Public Elementary Schools — Multnomah County, Oregon, 2002–2004

Varicella vaccination of school-aged children reduces the number of varicella cases and lost days of school. In 1996, the Advisory Committee on Immunization Practices (ACIP) recommended routine vaccination of all children aged 12–18 months, catch-up vaccination of all susceptible children before age 13 years, and vaccination of susceptible persons who have close contact with persons at high risk for serious complications and susceptible persons at high risk for exposure (*1*). In 1999, ACIP updated these recommendations to include vaccination requirements for child care and school entry (*2*). Since 2000, in accordance with ACIP recommendations, varicella vaccination requirements have been phased in for Oregon children who have not had varicella before starting out-of-home child care, kindergarten, or seventh grade; elementary school children will be fully covered by school year (SY) 2006–07. To monitor changes in varicella incidence, Oregon Health Services (OHS) and Multnomah Education Service District (MESD) started routine, individual, case-based varicella surveillance in Multnomah County public elementary schools (kindergarten through 5th grade) beginning SY 2002–03. This report describes the surveillance system, the incidence of varicella during SY 2002–03 and SY 2003–04, and the results of active surveillance for unidentified cases during SY 2002–03. The findings indicate that the number of varicella cases has decreased in Oregon and that establishing public elementary school–based varicella surveillance is feasible and useful.

In 2002, data were collected from 37,850 public elementary school students, representing 77% of Multnomah County children aged 5–10 years; the remaining 23%, who attended private schools, were home-schooled, or did not attend school, were excluded from the surveillance system (*3*). Multnomah County has 109 public elementary schools served by 26 school nurses employed by MESD and supervised from a central

office. A case of varicella was defined as a first occurrence of acute, generalized pruritic maculopapulovesicular rash, without other apparent cause and persisting longer than 24 hours, in a public elementary school student and at least one of the following: 1) physician diagnosis of varicella after examination during an office visit; 2) school nurse diagnosis of varicella after examination at school; 3) clinic nurse diagnosis of varicella based on signs and symptoms described by parents during a telephone conversation, but without examination; or 4) parental description of varicella, when physicians or nurses did not examine the student with suspected varicella.

For individual, case-based surveillance, school nurses sent OHS investigators vaccination and demographic data for students absent (according to their parents) or sent home (by a school nurse) with suspected varicella. OHS investigators interviewed parents of these students to collect data regarding previous occurrences of varicella and current disease characteristics, identifying cases by using the case definition. In addition, during SY 2002–03, OHS investigators conducted active surveillance of students exposed to cases of varicella in their classrooms by interviewing their parents to detect additional students with varicella not reported by their schools; vaccination and demographic data for exposed classmates were provided by MESD.

During SY 2002–03, a total of 24 nurses from 45 public elementary schools reported 130 students with suspected varicella. After investigation, 114 (88%) students were determined to have illnesses consistent with the varicella case definition. Of these students, 52 (46%) had varicella diagnosed by parental descriptions of rashes, 39 (34%) by physician diagnoses, 17 (15%) by school nurse diagnoses, and six (5%) by clinic nurse diagnoses based on parental descriptions. The 16 remaining students with suspected varicella included six lost to follow-up, one with a previous occurrence of varicella, and nine with other conditions diagnosed by physicians, predominantly insect bites; all 16 were vaccinated.

During SY 2002–03, the incidence of varicella peaked during October–January, when 75 (66%) cases occurred and steadily declined in subsequent months (February–May). Active surveillance for unidentified cases detected 11 additional cases among 1,479 students exposed to 96 reported students with varicella in 67 classrooms (sensitivity: 90% [96/107]).

During SY 2003–04, a total of 25 nurses from 31 public elementary schools reported 93 students with varicella; 82 (88%) students had illnesses consistent with the varicella case definition. Of these students, 36 (44%) had varicella diagnosed by physician diagnoses, 23 (28%) by parental descriptions of rashes, 16 (20%) by clinic nurse diagnoses based on parental descriptions, and seven (8%) by school nurse diagnoses. The 11 remaining students included nine lost to follow-up and two with other conditions diagnosed by physicians; all 11 were vaccinated.

Overall, for both SY 2002–03 and 2003–04, approximately 60% of varicella cases occurred as single cases in classrooms, and 40% occurred during a classroom outbreak (defined as two or more varicella cases in a classroom with onset dates <21 days apart). Among students, cases occurred most commonly in those aged 7 years (22%), followed by those aged 6 years (19%), aged 8 years (15%), aged 9 years (14%), aged 10 years (12%), and aged 5 years (10%). Sixty-nine percent of students with varicella had been vaccinated, and 28% lacked evidence of immunity, having had neither a history of vaccination nor disease; vaccination or disease history of the remaining 3% was unknown. Among vaccinated students, school vaccination records contained vaccination dates for 99.9%. Reporting by school nurses was timely; during both school years, the median time from the day students were first absent or sent home with varicella to the day OHS was notified was 3 days (range: same day to 18 days).

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Editorial Note: Since varicella vaccine licensure in 1995, surveillance has been mostly limited to nationwide reporting of deaths attributed to varicella, active surveillance for individual cases of varicella at sentinel sites (e.g., schools), and aggregate varicella case reporting from certain states (*4–6*). Although data have documented a substantial decline in varicella incidence, hospitalizations, and deaths, a national population-based varicella reporting system to compare incidence across jurisdictions and over time is needed. Since 1998, the Council of State and Territorial Epidemiologists (CSTE) has twice recommended that state public health agencies establish statewide surveillance systems for detecting individual cases of varicella to evaluate the ongoing impact of vaccination on varicella morbidity (*7,8*). CSTE set 2005 as the target year for national case-based surveillance, and CDC established guidelines for varicella surveillance in 2002 (*9*). Varicella surveillance at sentinel sites was considered an acceptable interim measure before establishing statewide surveillance. This report demonstrates the feasibility and usefulness of establishing a school-based varicella surveillance system as an interim measure in school systems with school nurses supervised from a central office. School-based surveillance might be less feasible in other school systems in Oregon that do not have centrally supervised school nurses.

The school-based varicella surveillance system described in this report successfully detected new varicella cases among public elementary school students. School nurses reported 90% of new varicella cases, and 88% were confirmed by physicians, nurses, or parents.

School-based surveillance detected more cases than would have been detected by using physician-based surveillance alone, considering that only 34% of SY 2002–03 cases and 44% of SY 2003–04 cases were diagnosed by physicians. These findings suggest that traditional varicella surveillance systems, which rely on physician reporting only, might substantially underestimate varicella incidence.

Although restricted in scope to the elementary school population in one county, second-year surveillance data indicate that varicella incidence has decreased. Whether this is attributable to increased varicella vaccination coverage or to year-to-year variation in disease occurrence is unclear. Nonetheless, consistent year-to-year operation of a school-based varicella surveillance system can track trends in varicella incidence.

The findings in this report are subject to at least one limitation. Although the varicella surveillance system successfully detected new cases, diagnostic tests were not performed. In areas with high vaccination coverage, varicella that occurs after vaccination is mild, with few lesions, and might be missed. Thus, laboratory confirmation of varicella cases can increase the sensitivity and specificity of varicella case detection (*9*).

CDC has provided guidelines for individual, case-based varicella reporting and, if feasibility is a problem, recommends that state health departments limit the number of case variables to three: age, varicella vaccination history, and number of lesions (a measure of severity) (*9*). As incidence declines, collecting additional data (e.g., contact information, severity of disease in the source case, and laboratory confirmation) will be necessary to describe the epidemiology of remaining disease. States are expected to be able to report individual varicella case information via CDC's National Notifiable Disease Surveillance System by the end of 2005.

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Progress Toward Poliomyelitis Eradication — Afghanistan and Pakistan, January 2004–February 2005

Although poliomyelitis remained endemic in only six countries at the end of 2003, a resurgence of polio occurred in 2004, originating in Nigeria and resulting in the export of wild poliovirus (WPV) into the polio-free countries of western and central Africa. However, progress toward interrupting WPV transmission continued during 2004 in Afghanistan, India, and Pakistan, the only remaining countries in Asia where polio is endemic (*1,2*). This report summarizes progress toward polio eradication in Afghanistan and Pakistan during January 2004–February 2005 and indicates that, with continued support from national and local leaders, interruption of poliovirus transmission in both countries is feasible by the end of 2005.

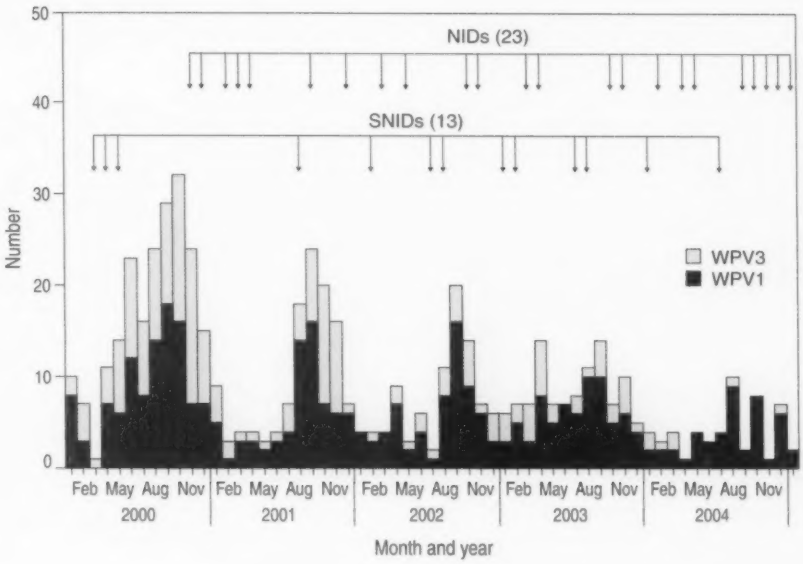
Immunization Activities

Routine infant vaccination coverage with oral poliovirus vaccine (OPV) remains low in Afghanistan and in multiple areas of Pakistan (*2*). To increase population immunity, both countries continued in 2004 to provide children aged <5 years with additional OPV doses during large-scale, house-to-house supplementary immunization activities (SIAs), conducted

approximately every 6 to 8 weeks. Closely synchronized between the two countries, eight SIA rounds were conducted in 2004 (Figure), and two rounds (mid-January and early March) have already been conducted in 2005. All rounds were nationwide, except for the December 2004 and January 2005 rounds in Afghanistan, which targeted approximately 60% of children aged <5 years in selected provinces, and the June round in Pakistan, which also targeted approximately 60% of children aged <5 years.

In both countries, activities to improve the effectiveness of SIAs focused on two areas: 1) advocacy with political, religious, and health leaders and 2) continued improvement of managerial and supervisory processes. Advocacy at national, provincial, and district levels was crucial to maintaining and improving leaders' commitment and support for polio eradication. National Ministry of Health (MOH), World Health Organization (WHO), and United Nations Children's Fund (UNICEF) polio teams further improved SIA effectiveness by continuing to monitor activities and by providing additional technical support for regions with remaining virus transmission and for other areas with performance problems during SIAs (e.g., security-compromised areas with difficult access or culturally conservative areas where access to homes is limited).

FIGURE. Number of confirmed cases of poliomyelitis, by wild poliovirus (WPV) type, and National Immunization Days (NIDs) and Subnational Immunization Days (SNIDs), by month and year — Pakistan, 2000–2005



Acute Flaccid Paralysis (AFP) Surveillance

AFP surveillance has remained sensitive and has improved overall in both Afghanistan and Pakistan. Surveillance quality is measured by two primary indicators: 1) the nonpolio AFP rate (at least one nonpolio AFP case per 100,000 persons aged <15 years) and 2) the completeness and timeliness of stool-specimen collection (at least 80% of AFP cases with two adequate stool specimens collected from patients within 14 days of paralysis onset). Both indicators were at target values or higher in 2004 in both Afghanistan and Pakistan at the national and provincial levels. In Pakistan, targets were also reached in 80% of districts; 24 of 121 districts in Pakistan failed to reach the target of collecting adequate stool specimens in 80% of reported cases.

Pakistan conducted detailed provincial reviews of AFP surveillance quality during the fourth quarter of 2004 in Balochistan and Northwest Frontier Province (NWFP), where no WPV was isolated for prolonged periods (15 months in Balochistan and 4 months in NWFP). The two provinces meet the surveillance quality indicator targets, with some need for improvement in active surveillance, particularly in NWFP. To increase the overall sensitivity of the surveillance system, the sampling of direct contacts of AFP patients was expanded to include the contacts of 1) any child for whom stool-specimen collection was inadequate or 2) patients for whom the adequacy of specimen storage and shipment was in doubt. As a result, in 2004, WPV was isolated from direct contacts of two virus-negative AFP patients. Surveillance teams were trained with new guidelines to reduce the inappropriate exclusion of AFP cases, resulting in an observed increase in overall AFP reporting during the second half of 2004. However, genetic sequencing* of viruses indicates that some virus lineages continued to circulate at low levels for at least 1.5 years without being detected, suggesting that gaps in surveillance sensitivity likely persist in certain areas, particularly in southern Punjab and Sindh provinces.

*The genetic sequence of the complete VP1 coding region is determined by using automated dye-labeled cycle sequencing procedures described previously (*3*) and the resulting sequences compared to a database of all recent poliovirus isolates. The comparisons are summarized through phylogenetic analysis.

Afghanistan achieved high nonpolio AFP rates of at least 2.0 per 100,000 population, with collection of adequate specimens from >80% of AFP patients in all regions in 2004. Nonpolio AFP rates and adequate stool specimen collection were lowest in the southern and southeastern regions. In those areas, continued security problems impaired surveillance; genetic data suggest that the wild poliovirus type 3 (WPV3) detected in December 2004 in the southern region had been circulating undetected for more than 1 year.

Incidence of Polio

From 2003 to 2004, the number of reported polio cases decreased approximately 50% in both countries, from 103 to 53 cases in Pakistan (46 wild poliovirus type 1 [WPV1] and seven WPV3) and from eight to four cases (two WPV1 and two WPV3) in Afghanistan. Polio continued to affect the very young, with 68% of cases (36 of 53) in Pakistan and two of four cases in Afghanistan in the <24-month age group. Vaccination status of cases was reported as >3 doses of OPV received for 36 cases (68%) in Pakistan and three of four cases in Afghanistan.

WPV1 has not been identified for nearly 1 year in Afghanistan, the longest period without detection since the introduction of AFP surveillance in 1997. Two WPV1 isolates detected in early 2004 in the security-affected southern region belonged to the same WPV1 lineage cluster identified later in the year in northern Sindh and southern Punjab provinces of Pakistan. WPV3 detected in May 2004 in Jalalabad, eastern region, and in late December near Kandahar, southern region, belong to WPV3 lineage clusters discovered in both countries in 2004; genetic sequence data indicate that the December 2004 WPV3 lineage circulated undetected for more than 1 year.

In 2004, two Pakistan provinces, Balochistan and NWFP, experienced long polio-free intervals (Table). In Balochistan, WPV was not detected for 15 months, from October 2003 to December 2004, when WPV1 (genomic sequencing pending) was detected in southeastern Balochistan, adjacent to a district of northern Sindh in which WPV is endemic. In 2004, WPV was not detected in NWFP from September through December, historically the peak transmission season. A WPV1 case was identified in early August with close genetic relation to a WPV1 lineage cluster cocirculating in Sindh. In January 2005, a WPV1 was isolated in Peshawar, NWFP, that was genetically related to other NWFP polioviruses.

Punjab, Pakistan's most densely populated province, reported three cases during the first half of 2004 and 14 cases, primarily from southern Punjab, during the second half. Genetic sequencing suggests that certain viruses identified in Punjab were directly imported from NWFP and Sindh. However, sequence analysis also reveals that at least two WPV1 and one WPV3 lineage detected in Punjab in 2004 are at least 1.5% different from their nearest genetic neighbor. This indicates the lineages must have circulated without detection by AFP surveillance for approximately 1.5 years or more based on the mutation rate of the genetic segment being sequenced. In 2004, Sindh became the most consistently polio-endemic province. Virus circulation in Sindh in 2004 occurred primarily in the north of the province in the first half of the year and in south-central Sindh in the second half. Sporadic transmission has continued in early 2005 in both southern Punjab (two WPV1 cases) and Sindh (two WPV1 cases).

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Editorial Note: Afghanistan and Pakistan progressed further toward polio eradication in 2004. Both countries reported 50% fewer cases in 2004, compared with 2003. In addition, WPV was not reported for 15- and 4-month intervals in Balochistan and NWFP, respectively, even though sensitive surveillance was maintained.

TABLE. Acute flaccid paralysis (AFP) surveillance indicators and reported wild poliovirus (WPV) cases, by quarter and poliovirus type — Pakistan and Afghanistan, 2004

	AFP reporting			Reported WPV cases						
				Quarter				Total cases by WPV type		
Country/Province	No. AFP cases	Nonpolio AFP rate*	% persons with AFP with adequate specimens	1	2	3	4	P1	P3	Total
Pakistan	2,615	3.5	88	11	8	16	18	46	7	**53**
Northwest Frontier Province	457	3.8	86	3	4	1	0	6	2	**8**
Balochistan	154	4.1	82	0	0	0	1	1	0	**1**
Punjab	1,207	3.2	90	3	0	5	8	3	13	**16**
Sindh	731	1.5	82	5	4	10	9	26	2	**28**
Other†	72	2.7	93	0	0	0	0	0	0	**0**
Afghanistan	683	4.5	93	2	1	0	1	2	2	**4**

* Per 100,000 persons aged <15 years.
† Azad Jammu Kashmir, Federally Administered Northern Areas, and Islamabad.

Faced with the continued challenge of preparing, implementing, and evaluating large, nationwide immunization rounds, both countries managed to maintain and improve SIA quality. SIA monitoring is used to identify low-performing areas rapidly and to rectify problems during the round or before the next round. However, serious challenges remain. Continued WPV transmission in parts of both countries, particularly in Sindh and Punjab in Pakistan and in the southern region of Afghanistan, indicates that SIAs still do not produce levels of population immunity required for interrupting the remaining chains of transmission.

Although SIA quality is improving, children are still being missed. To address this problem, national and local governments are urged to increase their commitment to the global polio eradication program. Support of the program by national and local leaders is one of the strongest determinants of SIA quality. In addition, specific steps have been taken to increase access to children. These include increasing access to homes in which no male family member is present by increasing the proportion of vaccination team members who are women and negotiating access to homes in culturally conservative areas. Measures have also been taken to improve the quality and efficiency of vaccination team supervision. These measures include increased training of field supervisors and increased numbers of WHO district support staff members assigned to expand interventional monitoring in difficult and low-performing districts.

AFP surveillance in both Afghanistan and Pakistan meets or exceeds WHO performance-indicator targets in most areas and is continuously reviewed to detect quality gaps and respond to them quickly. As transmission of poliovirus decreases overall, finding the remaining sources of transmission becomes even more challenging. Reliable detection of virus will require further increase in the overall sensitivity of the surveillance system and detailed epidemiologic information. Viruses that are genetically distant from their nearest phylogenetic neighbor have been identified in high-risk areas of both countries. The absence of more closely related viruses indicates that lineages are circulating undetected and AFP surveillance might still be missing cases.

To date, the achievements toward eradicating polio in Afghanistan and Pakistan would not have been possible without continued financial and technical support from the international polio partnership, especially from political and health leaders at national, provincial, and district levels in both countries. Available evidence indicates that, with continued support, interruption of WPV transmission in both countries can be accomplished by the end of 2005.

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Achievements in Public Health

Elimination of Rubella and Congenital Rubella Syndrome — United States, 1969–2004

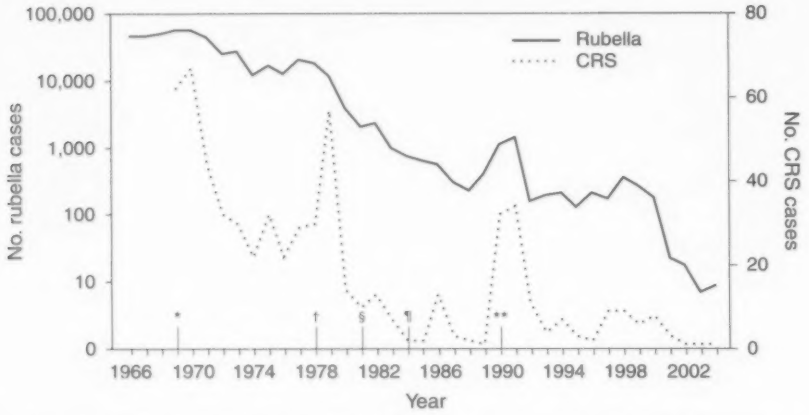
On March 21, this notice was posted as an MMWR Early Release *on the* MMWR *website* (http://www.cdc.gov/mmwr).

In October 2004, CDC convened an independent panel* of internationally recognized authorities on public health, infectious disease, and immunization to assess progress toward elimination of rubella and congenital rubella syndrome (CRS) in the United States, a national health objective for 2010 (*1*). Since rubella vaccine licensure in 1969, substantial declines in rubella and CRS have occurred, and the absence of endemic transmission in the United States is supported by recent data: 1) fewer than 25 reported rubella cases each year since 2001 (Figure), 2) at least 95% vaccination coverage among school-aged children, 3) estimated 91% population immunity, 4) adequate surveillance to detect rubella outbreaks, and 5) a pattern of virus genotypes consistent with virus originating in other parts of the world. Given the available data, panel members concluded unanimously that rubella is no longer endemic in the United States. This report summarizes the history and accomplishments of the rubella vaccination program in the United States and the Western Hemisphere and the challenges posed by rubella for the future.

Usually a mild rash illness, rubella (also called German measles) can have devastating effects when a pregnant woman is infected, especially during her first trimester. During the 1962–1965 worldwide rubella epidemic, an estimated 12.5 million cases of rubella occurred in the United States, resulting in 2,000 cases of encephalitis, 11,250 fetal deaths, 2,100 neonatal deaths, and 20,000 infants born with CRS, a constellation of birth defects that often includes blindness, deafness, and congenital heart defects. The economic impact of this epidemic in the United States was estimated at $1.5 billion (*2*). The global epidemic spurred development of rubella vaccines and emphasized the need to develop and implement

* The panel included authorities on rubella and representatives of the Advisory Committee on Immunization Practices, American Academy of Pediatrics, American Academy of Family Physicians, Pan American Health Organization, Council of State and Territorial Epidemiologists, March of Dimes, and Mexico.

FIGURE. Number of reported cases of rubella and congenital rubella syndrome (CRS), by year, and chronology of rubella vaccination recommendations by the Advisory Committee on Immunization Practices — United States, 1966–2004



* 1969 — First official recommendations are published for the use of rubella vaccine. Vaccination is recommended for children aged 1 year to puberty.

† 1978 — Recommendations for vaccination are expanded to include adolescents and certain adults, particularly females. Vaccination is recommended for adolescent or adult females and males in populations in colleges, certain places of employment (e.g., hospitals), and military bases.

§ 1981 — Recommendations place increased emphasis on vaccination of susceptible persons in training and educational settings (e.g., universities or colleges) and military settings, and vaccination of workers in health-care–settings.

¶ 1984 — Recommendations are published for vaccination of workers in daycare centers, schools, colleges, companies, government offices, and industrial sites. Providers are encouraged to conduct prenatal testing and postpartum vaccination of susceptible women. Recommendations for vaccination are expanded to include susceptible persons who travel abroad.

** 1990 — Recommendations include implementation of a new 2-dose schedule for measles-mumps-rubella vaccine.

strategies for using these vaccines to prevent this devastating health burden (*3*).

Rubella Vaccination in the United States

In 1969, live, attenuated rubella vaccines were first licensed in the United States (*4*), and a vaccination program was established with the goal of preventing congenital infections, including CRS. Before the introduction of vaccine, rubella incidence was highest among children aged ≤9 years (*5*). The new rubella vaccination program targeted a dose of vaccine to children aged 1 year to puberty (*6*). Although the greatest impact from rubella results from infections during pregnancy, vaccination of women of childbearing age was not advised because data were not available to assess the possible risk to the fetus if live, attenuated rubella virus vaccine was administered to a pregnant woman. Because of the possible risk to the fetus in women who were vaccinated while unknowingly pregnant, a registry was established to collect pregnancy outcomes (*7*). To increase coverage among school-aged children rapidly, mass campaigns were conducted, particularly in schools. In some places, these campaigns were also open to younger children.

During 1969–1977, an estimated 80 million doses of live, attenuated rubella virus vaccines were distributed in the United States. By 1977, reported vaccination levels were approximately 60% for children aged 1–4 years, 71% for those aged 5–9 years, and 64% for those aged 10–14 years (*8*). The number of reported rubella cases declined 78%, from 57,686 cases in 1969 to 12,491 cases in 1976. As anticipated, the greatest decreases in rubella occurred among persons aged <15 years; however, incidence declined in all age groups, including adults. This decrease in rubella also resulted in a decline in the number of reported CRS cases, from 68 cases reported in 1970 to 23 reported in 1976 (*9*).

The total number of rubella cases continued to decline overall during the late 1970s; however a resurgence of rubella occurred among older adolescents and young adults, with outbreaks occurring among students in high schools, colleges, universities, and among persons on military bases and workers in hospitals. Rubella incidence was highest among young adults (*8,10*). In addition, the number of reported CRS cases increased, from 23 in 1976 to 57 in 1979; however, the annual number of CRS cases never reached the level reported during the 1960s in the prevaccine era. Serologic studies at that time suggested that 10%–20% of adults remained susceptible to rubella (*11*).

The resurgence of rubella and its increased incidence among young adults focused attention on the need for additional strategies. In 1978, the changing epidemiology of rubella prompted the Advisory Committee on Immunization Practices (ACIP) to additionally recommend that rubella vaccine be targeted to susceptible postpubertal females, in addition to adolescents, persons in military service, college students, and persons in certain work settings (e.g., hospitals) (*12*). During 1978–1981, data from rubella vaccinations administered in the public sector (40%–50% of all rubella vaccinations) revealed that the number of doses of rubella vaccine administered to persons aged ≥15 years had doubled (*13*).

Efforts to increase overall childhood vaccination coverage to greater than 90% for all vaccine-preventable diseases, including rubella, had begun in 1977, with the first National Childhood Immunization Initiative (*13*). In 1978, a program was undertaken to eliminate indigenous measles in the United

States; the use of combined vaccines, either measles-rubella (MR) vaccine or measles-mumps-rubella (MMR) vaccine was encouraged. During 1978–1979, a review of the immunization records of approximately 28 million school-aged children indicated that 83% of students in kindergarten through 12th grade had received rubella vaccine (*13*). Unvaccinated children were offered vaccine.

These efforts to increase immunity among selected adults and children resulted in substantial decreases in the numbers of both rubella and CRS cases. During 1977–1981, reported rubella cases declined from 20,395 to 2,077. During 1979–1981, reported CRS cases decreased from 57 to 10 (*9*). For the 1981–82 school year, rubella vaccination coverage was 96% for children entering school (i.e., into kindergarten or first grade) in the 50 states and the District of Columbia (*14*). Efforts to maintain high coverage through enforcement of school immunization laws produced a continuing decrease in reported rubella cases.

In 1979, a new formulation of live, attenuated, rubella vaccine (RA 27/3) replaced the previous rubella vaccines in the United States. RA 27/3 vaccine had been determined to induce higher antibody titers and produce an immune response more closely paralleling natural infection than previous vaccines (*15*).

By 1979, rubella vaccination had eliminated the characteristic 6–9 year epidemic cycle of rubella in the United States (*9*). In 1980, national health objectives for 1990 were established for rubella and CRS, calling for reductions in the annual number of rubella cases to fewer than 1,000 and CRS cases to fewer than 10 (*16*). During the 1980s, the number of reported rubella cases continued to decline steadily, and overall incidence continued to decrease in all age groups. By 1983, the 1990 objectives already had been achieved, with 970 rubella cases and four CRS cases reported (*9,13*).

During the early 1980s, outbreaks continued to be reported in health-care settings, universities, workplaces, and prisons. In 1981, ACIP recommendations increased emphasis on targeting these settings to ensure vaccination coverage among students and staff members (*17*). By 1984, with outbreaks continuing (*18*), ACIP recommendations were expanded to include workers in government offices and at industrial sites (*19*). In 1988, state health departments reported an all-time low of 225 cases of rubella; however, in 1989, a total of 396 cases were reported, and in 1990, the number increased to 1,125 (*20*). Most cases were associated with outbreaks that occurred in settings where unvaccinated adults congregated, including colleges, workplaces, prisons, and in religious communities that did not accept vaccination. Outbreaks among these populations accounted for 56% of CRS cases in the 1990s.

In 1989, a goal was established to eliminate indigenous rubella transmission and CRS in the United States by 2000 (*21*). In 1990, recommendations included a new 2-dose schedule (*22*). Three years later, with establishment of the 1993 Childhood Immunization Initiative, efforts to attain high vaccination coverage were intensified (*23*). With these efforts, the number of annual rubella cases continued to decline in the mid-1990s. Outbreaks continued to be associated with settings where adults had close contact; however, the demographic characteristics of rubella patients changed. Before 1995, most persons with rubella were non-Hispanic; beginning in 1995, most were Hispanic (*24*). Beginning in 1998, data on country of origin were collected for rubella patients. These data revealed that, during 1998 and 1999, approximately 79% and 65% of patients whose country of origin was known were foreign-born. Of these, 91% in 1998 and 98% in 1999 were born in the Western Hemisphere, and 43% in 1998 and 81% in 1999 were born in Mexico. These persons were either unvaccinated or their vaccination status was unknown. Although no new recommendations were implemented, emphasis was increased on identifying and vaccinating foreign-born adults. During 1998–2000, a total of 23 CRS cases were reported to CDC. The infants in 22 (96%) of these cases were born to Hispanic women, and 22 of the mothers with known country of birth were born outside the United States. The countries of origin of these mothers were Mexico (14 mothers), Dominican Republic (four), Honduras (two), Colombia (one), and Philippines (one). A nationwide rubella seroprevalence study during 1988–1994 demonstrated overall rubella seropositivity of 89% (*25*), which, according to a mathematical model, is above the level needed to interrupt transmission of rubella virus and sustain elimination.

Since 2001, the annual numbers of rubella cases have been the lowest ever recorded in the United States: 23 in 2001, 18 in 2002, seven in 2003, and nine in 2004. Approximately half of these cases have occurred among persons born outside the United States, of whom most were born outside the Western Hemisphere. During 2001–2004, four CRS cases were reported to CDC; the mothers of three of the children were born outside the United States.

Low numbers of cases and geographic and temporal distribution of cases support the conclusion that rubella is no longer endemic in the United States. Specifically, CDC defines absence of endemic transmission as the lack of existence of any continuous U.S.-acquired chain of transmission that persists for ≥12 months in any defined geographic area. In 2004, the panel convened by CDC concluded that sustained transmission of rubella has been interrupted.

Rubella Vaccination in the Western Hemisphere

The changing epidemiology of rubella in the United States during the preceding 10 years reflected efforts to control the disease elsewhere in the Western Hemisphere. The burden of rubella was increasingly recognized in countries as their vaccination programs succeeded in controlling measles, whose symptoms can resemble rubella. In 1997, a Technical Advisory Group for the Pan American Health Organization (PAHO) recommended strategies for rubella control and CRS prevention (*26*). In 2003, with the success of accelerated rubella control, PAHO member countries voted to establish a goal to eliminate rubella and CRS from the Western Hemisphere by 2010 (*27*). As of 2004, a total of 43 of 44 countries and territories in the region had included rubella vaccine in their routine immunization programs. For countries reporting rubella cases to PAHO, the number of reported rubella cases dropped from 135,947 in 1998 to fewer than 1,000 cases in 2003.

Global Challenges

With elimination of endemic chains of rubella transmission in the United States, future patterns of rubella will most likely reflect global disease epidemiology. Since 1998, most non-U.S.-born cases of rubella reported in the United States have occurred among persons born in countries where rubella vaccination has not been or was only recently implemented. According to a survey of the member countries in the World Health Organization, the number of countries that have incorporated rubella-containing vaccine into their routine national immunization programs increased from 65 (33%) in 1996 to 110 (57%) in 2003. However, rubella continues to be endemic in many parts of the world. The United States should continue its vigilance against rubella and CRS by 1) maintaining high vaccination rates among children; 2) ensuring vaccination among women of childbearing age, especially women born outside the United States; 3) continuing surveillance of both rubella and CRS; and 4) responding rapidly to any outbreak.

Reported by: *Epidemiology and Surveillance Div, National Immunization Program; Div of Viral and Rickettsial Disease, National Center for Infectious Diseases, CDC. Immunization Unit, Family and Community Health, Pan American Health Organization/World Health Organization, Washington, DC.*

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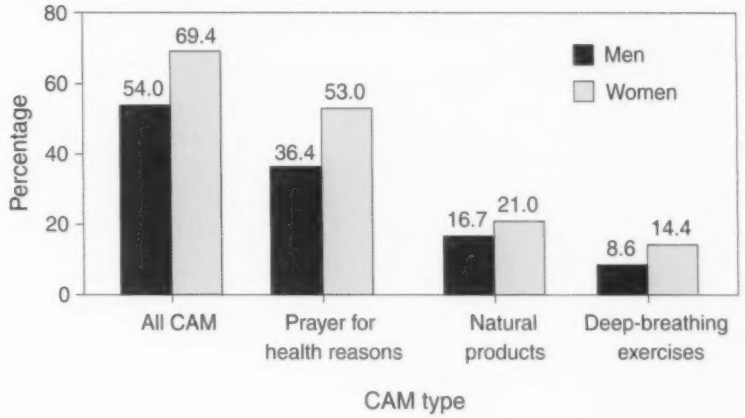
QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Adults Aged ≥18 Years Who Used Complementary and Alternative Medicine (CAM) During the Preceding 12 Months, by sex — United States, 2002



More than half of adults used some type of CAM during the preceding 12 months. Of the 27 types* of CAM studied, prayer for health reasons was the most frequently used. Women were more likely than men to use CAM, including prayer for health reasons, natural products (e.g., nonvitamins and nonminerals such as herbs or herbal medicine), and deep-breathing exercises.

* Includes acupuncture; ayurveda; homeopathic treatment; naturopathy; chelation therapy; folk medicine; nonvitamin, nonmineral, and natural products; diet-based therapies (six subgroups); megavitamin therapy; chiropractic care; massage; biofeedback; meditation; guided imagery; progressive relaxation; deep-breathing exercises; hypnosis; yoga; tai chi; qi gong; prayer for health reasons; and energy healing therapy/Reiki. Respondents might have reported using more than one type of therapy.

SOURCES: Barnes PM, Powell-Griner E, McFann K, Nahin RL. Complementary and alternative medicine use among adults: United States, 2002. Advance data from vital and health statistics; no. 343. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2004. Available at http://www.cdc.gov/nchs/data/ad/ad343.pdf.

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Notice to Readers

Introduction to Public Health Surveillance Course

CDC and Emory University's Rollins School of Public Health will cosponsor a course, "Introduction to Public Health Surveillance," during May 9–13, 2005, in Atlanta, Georgia. The course is designed for state and local public health professionals.

The course will provide practicing public health professionals with the theoretical and practical tools necessary to design, implement, and evaluate effective surveillance programs. Topics include overview and history of surveillance systems; planning considerations; sources and collection of data; analysis, interpretation, and communication of data; surveillance systems technology; ethics and legalities; state and local concerns; and future considerations. There is a tuition charge.

Additional information and applications are available from Emory University, Global Health Dept., 1518 Clifton Road, N.E., Room 746, Atlanta, GA 30322; telephone, 404-727-3485; fax, 404-727-4590; at http://www.sph.emory.edu/epicourse; or by email, pvaleri@sph.emory.edu.

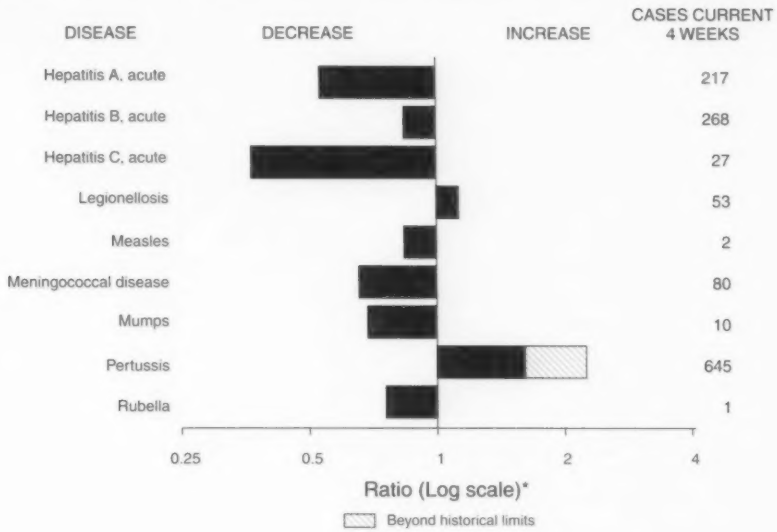
Notice to Readers

Webcast on Recognition of Chemical-Associated Gastrointestinal Illness

Since September 11, 2001, concern in the United States has increased about potential terrorist attacks involving the use of chemical agents. The national focus of a potential chemical terrorism event has traditionally been on an overt event such as release of a known chemical agent in a public place. However, recent cases of both intentional and inadvertent food contamination with resultant illness underscore the need for health-care providers and public health officials to be alert for patients in their communities who have signs and symptoms consistent with chemical exposures.

On March 30, 2005, at 12:00–1:00 p.m. EST, the Public Health Training Network will present, "Recognition of Chemical Associated Gastrointestinal Foodborne Illness." This webcast was developed by the National Center for Environmental Health/Agency for Toxic Substances and Disease Registry. The purpose of this webcast is to provide training to clinicians and public health officials on the latest information about accurately recognizing, reporting, and managing victims of a covert chemical-associated event such as the intentional contamination and subsequent distribution of food. Interested viewers can access the webcast at the designated time by logging on at http://www.phppo.cdc.gov/phtn/gastro-05.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals March 19, 2005, with historical data



* Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary of provisional cases of selected notifiable diseases, United States, cumulative, week ending March 19, 2005 (11th Week)*

Disease	Cum. 2005	Cum. 2004	Disease	Cum. 2005	Cum. 2004
Anthrax	—	—	Hemolytic uremic syndrome, postdiarrheal†	16	11
Botulism:			HIV infection, pediatric†¶	31	49
foodborne	3	1	Influenza-associated pediatric mortality†**	21	—
infant	9	17	Measles	6††	13§§
other (wound & unspecified)	4	1	Mumps	52	44
Brucellosis	19	18	Plague	—	—
Chancroid	7	8	Poliomyelitis, paralytic	—	—
Cholera	—	2	Psittacosis†	3	2
Cyclosporiasis†	3	66	Q fever†	11	9
Diphtheria	—	—	Rabies, human	1	—
Domestic arboviral diseases			Rubella	4	7
(neuroinvasive & non-neuroinvasive):	—	—	Rubella, congenital syndrome	1	—
California serogroup†§	—	1	SARS†**	—	—
eastern equine†§	—	—	Smallpox†	—	—
Powassan†§	—	—	*Staphylococcus aureus*:		
St. Louis†§	—	—	Vancomycin-intermediate (VISA)†	—	—
western equine†§	—	—	Vancomycin-resistant (VRSA)†	—	—
Ehrlichiosis:	—	—	Streptococcal toxic-shock syndrome†	18	38
human granulocytic (HGE)†	13	12	Tetanus	2	1
human monocytic (HME)†	16	13	Toxic-shock syndrome	25	27
human, other and unspecified †	5	1	Trichinellosis¶¶	4	—
Hansen disease†	7	16	Tularemia†	3	4
Hantavirus pulmonary syndrome†	3	2	Yellow fever	—	—

—: No reported cases.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).
† Not notifiable in all states.
§ Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases (ArboNet Surveillance).
¶ Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention. Last update January 30, 2005.
** Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases.
†† Of six cases reported, four were indigenous and two were imported from another country.
§§ Of 13 case reported, three were indigenous and ten were imported from another country.
¶¶ Formerly Trichinosis.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	AIDS		Chlamydia†		Coccidioidomycosis		Cryptosporidiosis	
	Cum. 2005§	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	2,989	5,431	164,012	189,128	911	1,125	318	582
NEW ENGLAND	133	180	5,423	6,371	—	—	22	30
Maine	3	5	462	405	N	N	1	5
N.H.	2	5	405	375	—	—	4	7
Vt.¶	—	7	225	248	—	—	8	3
Mass.	47	49	3,047	2,844	—	—	5	10
R.I.	14	22	701	776	—	—	1	1
Conn.	67	92	583	1,723	N	N	3	4
MID. ATLANTIC	447	626	19,751	23,255	—	—	47	101
Upstate N.Y.	39	78	3,926	4,179	N	N	15	18
N.Y. City	221	300	5,730	7,560	—	—	10	29
N.J.	87	186	2,174	3,770	N	N	2	8
Pa.	100	62	7,921	7,746	N	N	20	46
E.N. CENTRAL	275	614	21,319	34,692	1	4	49	138
Ohio	59	155	2,782	8,494	N	N	24	36
Ind.	37	83	3,867	3,916	N	N	4	21
Ill.	147	278	7,244	9,998	—	—	—	22
Mich.	26	61	4,252	8,505	1	4	9	23
Wis.	6	37	3,174	3,779	N	N	12	36
W.N. CENTRAL	85	176	9,778	12,015	—	1	44	57
Minn.	35	33	1,638	2,458	N	N	10	23
Iowa	16	9	1,421	1,500	N	N	10	8
Mo.	17	82	4,236	4,480	—	—	16	14
N. Dak.	—	8	254	349	N	N	—	—
S. Dak.	3	—	569	509	—	—	2	4
Nebr.¶	—	8	404	1,142	—	1	—	—
Kans.	14	36	1,256	1,577	N	N	6	8
S. ATLANTIC	1,108	1,966	34,539	35,394	—	—	72	113
Del.	—	29	660	653	N	N	—	—
Md.	82	193	3,512	4,169	—	—	5	7
D.C.	28	96	773	770	—	—	1	2
Va.¶	58	76	5,303	4,845	—	—	8	8
W. Va.	12	23	568	630	N	N	4	1
N.C.	127	173	7,754	5,277	N	N	10	24
S.C.¶	42	135	4,724	3,844	—	—	—	3
Ga.	231	324	2,219	6,926	—	—	19	40
Fla.	528	917	9,026	8,280	N	N	25	28
E.S. CENTRAL	141	266	12,196	11,192	—	2	7	29
Ky.	25	39	2,751	1,258	N	N	1	6
Tenn.¶	59	109	4,307	4,630	N	N	2	11
Ala.¶	54	75	648	2,825	—	—	3	8
Miss.	3	43	4,490	2,479	—	2	1	4
W.S. CENTRAL	331	788	20,536	24,564	—	—	10	24
Ark.	35	42	1,790	1,633	—	—	—	8
La.	39	147	1,034	5,431	—	—	2	—
Okla.	43	27	2,234	2,027	N	N	4	7
Tex.¶	214	572	15,478	15,473	N	N	4	9
MOUNTAIN	112	191	10,714	10,297	581	730	20	26
Mont.	—	—	421	26	N	N	—	2
Idaho¶	1	2	391	692	N	N	1	1
Wyo.	—	—	240	224	—	—	—	2
Colo.	12	28	2,298	2,561	N	N	6	14
N. Mex.	17	19	537	1,384	2	7	2	1
Ariz.	57	104	4,655	3,712	559	705	3	5
Utah	8	9	742	585	2	4	3	—
Nev.¶	17	29	1,430	1,113	18	14	5	1
PACIFIC	357	624	29,756	31,348	329	388	47	64
Wash.	28	63	4,060	3,640	N	N	—	3
Oreg.¶	32	17	1,734	1,630	—	—	5	7
Calif.	291	514	22,292	24,107	329	388	42	53
Alaska	5	5	782	685	—	—	—	—
Hawaii	1	25	888	1,286	—	—	—	1
Guam	1	—	—	197	—	—	—	—
P.R.	1	141	834	473	N	N	N	N
V.I.	3	2	32	101	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	2	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.

* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

† Chlamydia refers to genital infections caused by *C. trachomatis*.

§ Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention. Last update January 30, 2005.

¶ Contains data reported through National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	*Escherichia coli*, Enterohemorrhagic (EHEC)						Giardiasis		Gonorrhea	
	O157:H7		Shiga toxin positive, serogroup non-O157		Shiga toxin positive, not serogrouped					
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	182	171	23	32	30	24	2,802	3,268	54,783	67,681
NEW ENGLAND	14	8	4	9	5	2	217	278	1,015	1,491
Maine	—	—	—	—	—	—	31	27	32	63
N.H.	—	1	1	—	—	—	7	8	32	25
Vt.	1	—	—	—	—	—	24	16	6	14
Mass.	5	2	1	3	5	2	117	149	617	617
R.I.	1	1	—	—	—	—	17	23	107	205
Conn.	7	4	2	6	—	—	21	55	221	567
MID. ATLANTIC	22	16	1	—	2	6	506	737	5,786	7,634
Upstate N.Y.	12	3	1	—	—	3	164	188	1,275	1,378
N.Y. City	1	5	—	—	—	—	125	260	1,444	2,457
N.J.	5	—	—	—	—	1	64	87	745	1,428
Pa.	4	8	—	—	2	2	153	202	2,322	2,371
E.N. CENTRAL	45	46	3	9	3	3	359	516	8,225	14,470
Ohio	21	11	1	—	2	3	119	158	1,442	4,459
Ind.	3	13	—	—	—	—	N	N	1,511	1,397
Ill.	5	7	1	—	—	—	31	175	2,977	4,186
Mich.	7	8	—	1	1	—	125	113	1,413	3,489
Wis.	9	7	1	8	—	—	84	70	882	939
W.N. CENTRAL	27	25	4	6	5	6	316	303	3,093	3,890
Minn.	3	11	1	2	2	—	125	98	490	939
Iowa	5	3	—	—	—	—	45	39	264	260
Mo.	11	3	2	4	1	1	72	100	1,746	1,800
N. Dak.	—	1	—	—	—	3	1	4	15	35
S. Dak.	2	—	—	—	—	—	18	12	68	51
Nebr.	3	4	1	—	1	—	22	23	106	254
Kans.	3	3	—	—	1	2	33	27	404	551
S. ATLANTIC	23	11	4	3	13	5	527	521	15,162	16,288
Del.	—	—	N	N	N	N	8	11	162	216
Md.	5	2	1	—	—	1	33	19	1,423	1,758
D.C.	—	—	—	—	—	—	12	16	452	507
Va.	1	—	1	2	2	—	110	64	2,031	2,047
W. Va.	—	1	—	—	—	—	6	7	171	179
N.C.	—	—	—	—	9	3	N	N	4,020	3,254
S.C.	—	1	—	—	—	—	19	14	2,060	1,891
Ga.	5	2	1	—	—	—	167	158	959	3,068
Fla.	12	5	1	1	2	1	172	232	3,884	3,368
E.S. CENTRAL	9	7	—	—	—	2	69	65	4,260	5,187
Ky.	—	3	—	—	—	2	N	N	840	546
Tenn.	6	2	—	—	—	—	31	28	1,593	1,736
Ala.	3	1	—	—	—	—	38	37	478	1,644
Miss.	—	1	—	—	—	—	—	—	1,349	1,261
W.S. CENTRAL	4	16	1	—	1	—	49	60	7,914	9,220
Ark.	1	1	—	—	—	—	18	27	937	757
La.	—	1	1	—	1	—	7	10	643	2,595
Okla.	1	3	—	—	—	—	24	23	1,033	897
Tex.	2	11	—	—	—	—	N	N	5,301	4,971
MOUNTAIN	15	17	6	4	1	—	246	266	2,418	2,381
Mont.	1	1	—	—	—	—	9	5	23	7
Idaho	1	3	4	1	—	—	22	42	19	13
Wyo.	—	—	1	—	—	—	1	1	11	11
Colo.	3	3	1	1	—	—	77	87	596	628
N. Mex.	—	3	—	1	—	—	9	12	100	168
Ariz.	4	2	N	N	N	N	47	57	976	1,015
Utah	2	2	—	—	—	—	64	44	126	63
Nev.	4	3	—	1	1	—	17	18	567	476
PACIFIC	23	25	—	1	—	—	513	522	6,910	7,120
Wash.	5	3	—	—	—	—	28	38	622	601
Oreg.	—	2	—	1	—	—	42	92	296	208
Calif.	14	17	—	—	—	—	414	370	5,712	5,863
Alaska	2	—	—	—	—	—	13	8	106	122
Hawaii	2	3	—	—	—	—	16	14	174	326
Guam	N	N	—	—	—	—	—	—	—	45
P.R.	—	—	—	—	—	—	6	4	85	43
V.I.	—	—	—	—	—	—	—	—	2	33
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	*Haemophilus influenzae*, invasive							
	All ages		Age <5 years					
	All serotypes		Serotype b		Non-serotype b		Unknown serotype	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	464	498	—	3	19	26	44	54
NEW ENGLAND	35	46	—	1	3	4	2	—
Maine	2	3	—	—	—	—	—	—
N.H.	—	9	—	—	—	1	—	—
Vt.	5	4	—	—	—	—	2	—
Mass.	15	22	—	1	—	2	—	—
R.I.	4	1	—	—	2	—	—	—
Conn.	9	7	—	—	1	1	—	—
MID. ATLANTIC	89	99	—	—	—	1	10	14
Upstate N.Y.	26	29	—	—	—	1	1	2
N.Y. City	15	19	—	—	—	—	3	4
N.J.	17	21	—	—	—	—	3	3
Pa.	31	30	—	—	—	—	3	5
E.N. CENTRAL	65	94	—	—	1	6	2	14
Ohio	36	32	—	—	—	2	2	4
Ind.	14	11	—	—	1	3	—	1
Ill.	2	25	—	—	—	—	—	5
Mich.	8	7	—	—	—	1	—	3
Wis.	5	19	—	—	—	—	—	1
W.N. CENTRAL	27	20	—	1	1	1	5	2
Minn.	11	8	—	—	1	1	—	—
Iowa	—	1	—	1	—	—	—	—
Mo.	11	7	—	—	—	—	2	2
N. Dak.	1	—	—	—	—	—	1	—
S. Dak.	—	—	—	—	—	—	—	—
Nebr.	2	4	—	—	—	—	1	—
Kans.	2	—	—	—	—	—	1	—
S. ATLANTIC	137	112	—	—	5	1	8	9
Del.	—	—	—	—	—	—	—	—
Md.	22	25	—	—	2	1	1	—
D.C.	—	—	—	—	—	—	—	—
Va.	11	9	—	—	—	—	—	—
W. Va.	8	6	—	—	—	—	2	3
N.C.	24	10	—	—	2	—	—	—
S.C.	3	2	—	—	—	—	—	—
Ga.	43	29	—	—	—	—	4	6
Fla.	26	31	—	—	1	—	1	—
E.S. CENTRAL	22	19	—	—	—	—	4	5
Ky.	—	—	—	—	—	—	—	—
Tenn.	17	11	—	—	—	—	2	4
Ala.	5	8	—	—	—	—	2	1
Miss.	—	—	—	—	—	—	—	—
W.S. CENTRAL	22	22	—	—	1	3	5	—
Ark.	—	—	—	—	—	—	—	—
La.	10	7	—	—	—	—	5	—
Okla.	12	15	—	—	1	3	—	—
Tex.	—	—	—	—	—	—	—	—
MOUNTAIN	51	66	—	1	7	9	6	8
Mont.	—	—	—	—	—	—	—	—
Idaho	1	2	—	—	—	—	—	1
Wyo.	1	—	—	—	—	—	—	—
Colo.	12	11	—	—	—	—	2	1
N. Mex.	6	18	—	—	2	3	—	4
Ariz.	20	32	—	—	3	6	1	1
Utah	4	1	—	1	—	—	1	—
Nev.	7	2	—	—	2	—	2	1
PACIFIC	16	20	—	—	1	1	2	2
Wash.	—	1	—	—	—	—	—	1
Oreg.	9	11	—	—	—	—	2	—
Calif.	4	6	—	—	1	1	—	1
Alaska	1	—	—	—	—	—	—	—
Hawaii	2	2	—	—	—	—	—	—
Guam	—	—	—	—	—	—	—	—
P.R.	—	—	—	—	—	—	—	—
V.I.	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	Hepatitis (viral, acute), by type					
	A		B		C	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	763	1,328	1,125	1,262	109	185
NEW ENGLAND	112	213	62	82	2	3
Maine	—	6	2	1	—	—
N.H.	9	5	2	10	—	—
Vt.	—	5	—	1	2	1
Mass.	84	171	50	41	—	2
R.I.	5	4	—	—	—	—
Conn.	14	22	8	29	—	—
MID. ATLANTIC	118	165	278	230	18	30
Upstate N.Y.	27	14	21	9	4	1
N.Y. City	49	61	11	40	—	—
N.J.	13	36	194	111	—	—
Pa.	29	54	52	70	14	29
E.N. CENTRAL	50	128	69	96	21	10
Ohio	16	14	37	38	—	2
Ind.	9	18	5	2	1	—
Ill.	5	50	—	—	—	1
Mich.	16	33	27	45	20	7
Wis.	4	13	—	11	—	—
W.N. CENTRAL	26	23	50	75	9	17
Minn.	3	1	—	8	—	1
Iowa	4	5	3	2	—	—
Mo.	13	5	32	56	9	16
N. Dak.	—	—	—	1	—	—
S. Dak.	—	2	—	—	—	—
Nebr.	3	7	7	6	—	—
Kans.	3	3	8	2	—	—
S. ATLANTIC	132	233	354	372	32	42
Del.	2	3	4	7	—	2
Md.	11	43	37	36	8	2
D.C.	—	3	—	5	—	1
Va.	16	13	45	28	4	5
W. Va.	—	1	5	—	1	1
N.C.	22	15	34	32	5	3
S.C.	4	5	17	16	—	4
Ga.	35	94	91	122	—	5
Fla.	42	56	121	126	14	19
E.S. CENTRAL	28	38	57	91	12	20
Ky.	3	2	17	8	—	8
Tenn.	19	25	24	33	6	5
Ala.	3	4	15	16	3	—
Miss.	3	7	1	34	3	7
W.S. CENTRAL	22	184	40	49	1	47
Ark.	1	22	11	21	—	—
La.	10	7	7	19	1	30
Okla.	1	11	—	8	—	—
Tex.	10	144	22	1	—	17
MOUNTAIN	93	103	105	81	6	4
Mont.	6	—	—	—	—	—
Idaho	7	4	3	2	—	—
Wyo.	—	—	—	1	—	—
Colo.	7	7	7	11	—	—
N. Mex.	5	3	3	4	—	1
Ariz.	59	72	75	44	—	2
Utah	6	16	10	10	4	—
Nev.	3	1	7	9	2	1
PACIFIC	182	241	110	186	8	12
Wash.	12	11	9	17	1	1
Oreg.	9	19	18	35	2	5
Calif.	156	206	82	129	5	4
Alaska	1	1	—	4	—	—
Hawaii	4	4	1	1	—	2
Guam	—	1	—	1	—	—
P.R.	—	6	2	6	—	—
V.I.	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
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TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	Legionellosis		Listeriosis		Lyme disease		Malaria	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	222	255	98	85	965	1,622	198	239
NEW ENGLAND	8	5	2	3	23	122	4	19
Maine	—	—	—	1	2	11	—	—
N.H.	2	—	1	1	10	2	2	—
Vt.	—	—	—	—	—	4	—	1
Mass.	4	3	—	—	7	81	2	14
R.I.	—	1	—	—	1	9	—	1
Conn.	2	1	1	1	3	15	—	3
MID. ATLANTIC	68	55	20	22	718	1,283	44	51
Upstate N.Y.	16	10	5	4	95	298	8	8
N.Y. City	2	3	4	3	—	—	19	25
N.J.	14	19	4	7	302	385	11	10
Pa.	36	23	7	8	321	600	6	8
E.N. CENTRAL	43	72	13	11	22	38	11	17
Ohio	24	32	4	4	20	8	3	3
Ind.	9	11	—	2	1	—	—	3
Ill.	—	13	—	—	—	—	1	2
Mich.	8	14	4	3	1	—	6	4
Wis.	2	2	5	2	U	30	1	5
W.N. CENTRAL	9	4	8	3	29	12	7	15
Minn.	1	—	2	2	27	3	1	6
Iowa	—	—	3	—	1	2	2	1
Mo.	7	3	2	1	1	7	3	4
N. Dak.	1	—	1	—	—	—	—	1
S. Dak.	—	1	—	—	—	—	—	1
Nebr.	—	—	—	—	—	—	—	—
Kans.	—	—	—	—	—	—	1	2
S. ATLANTIC	54	53	25	14	152	131	53	72
Del.	—	1	N	N	25	14	—	1
Md.	15	8	3	3	84	75	16	22
D.C.	1	2	—	—	1	1	1	4
Va.	4	4	2	—	10	2	7	4
W. Va.	3	2	—	1	—	—	1	—
N.C.	6	7	5	4	11	27	7	3
S.C.	—	1	—	—	4	1	—	4
Ga.	6	4	4	2	—	2	11	8
Fla.	19	24	11	4	17	9	10	26
E.S. CENTRAL	3	10	4	3	3	4	7	7
Ky.	1	2	—	1	—	—	1	1
Tenn.	—	5	2	2	3	1	5	1
Ala.	2	3	2	—	—	—	1	4
Miss.	—	—	—	—	—	3	—	1
W.S. CENTRAL	2	26	1	9	5	12	17	21
Ark.	1	—	—	—	—	—	1	1
La.	1	1	1	—	—	—	—	2
Okla.	—	2	—	—	—	—	2	1
Tex.	—	23	—	9	5	12	14	17
MOUNTAIN	16	15	—	2	—	4	11	8
Mont.	—	—	—	—	—	—	—	—
Idaho	1	1	—	1	—	1	—	—
Wyo.	2	3	—	—	—	1	1	—
Colo.	2	3	—	1	—	—	6	3
N. Mex.	1	—	—	—	—	—	—	1
Ariz.	3	2	—	—	—	1	2	1
Utah	3	5	—	—	—	1	2	1
Nev.	4	1	—	—	—	—	—	2
PACIFIC	19	15	25	18	13	16	44	29
Wash.	1	2	2	3	—	1	—	1
Oreg.	N	N	1	4	1	7	1	3
Calif.	18	13	22	11	11	8	40	25
Alaska	—	—	—	—	1	—	2	—
Hawaii	—	—	—	—	N	N	1	—
Guam	—	—	—	—	—	—	—	—
P.R.	—	—	—	—	N	N	—	—
V.I.	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	Meningococcal disease									
	All serogroups		Serogroup A, C, Y, and W-135		Serogroup B		Other serogroup		Serogroup unknown	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	285	395	21	27	18	11	—	—	246	357
NEW ENGLAND	26	18	1	2	—	—	—	—	25	16
Maine	1	3	—	—	—	—	—	—	1	3
N.H.	2	2	—	—	—	—	—	—	2	2
Vt.	3	1	—	—	—	—	—	—	3	1
Mass.	11	12	—	2	—	—	—	—	11	10
R.I.	2	—	—	—	—	—	—	—	2	—
Conn.	7	—	1	—	—	—	—	—	6	—
MID. ATLANTIC	39	58	10	16	2	4	—	—	27	38
Upstate N.Y.	9	19	1	3	1	2	—	—	7	14
N.Y. City	5	12	—	—	—	—	—	—	5	12
N.J.	12	6	—	—	—	—	—	—	12	6
Pa.	13	21	9	13	1	2	—	—	3	6
E.N. CENTRAL	22	38	6	7	3	2	—	—	13	29
Ohio	7	18	—	3	2	2	—	—	5	13
Ind.	4	8	—	—	1	—	—	—	3	8
Ill.	—	1	—	—	—	—	—	—	—	1
Mich.	6	4	6	4	—	—	—	—	—	—
Wis.	5	7	—	—	—	—	—	—	5	7
W.N. CENTRAL	21	16	1	—	1	1	—	—	19	15
Minn.	4	5	1	—	—	—	—	—	3	5
Iowa	7	2	—	—	1	1	—	—	6	1
Mo.	6	6	—	—	—	—	—	—	6	6
N. Dak.	—	—	—	—	—	—	—	—	—	—
S. Dak.	—	1	—	—	—	—	—	—	—	1
Nebr.	1	1	—	—	—	—	—	—	1	1
Kans.	3	1	—	—	—	—	—	—	3	1
S. ATLANTIC	49	71	2	1	4	1	—	—	43	69
Del.	—	1	—	—	—	—	—	—	—	1
Md.	6	4	1	—	2	—	—	—	3	4
D.C.	—	4	—	1	—	—	—	—	—	3
Va.	4	2	—	—	—	—	—	—	4	2
W. Va.	—	3	—	—	—	—	—	—	—	3
N.C.	6	9	1	—	2	1	—	—	3	8
S.C.	7	5	—	—	—	—	—	—	7	5
Ga.	7	5	—	—	—	—	—	—	7	5
Fla.	19	38	—	—	—	—	—	—	19	38
E.S. CENTRAL	15	18	—	—	1	—	—	—	14	18
Ky.	5	3	—	—	1	—	—	—	4	3
Tenn.	7	6	—	—	—	—	—	—	7	6
Ala.	—	5	—	—	—	—	—	—	—	5
Miss.	3	4	—	—	—	—	—	—	3	4
W.S. CENTRAL	25	43	1	1	2	—	—	—	22	42
Ark.	5	5	—	—	—	—	—	—	5	5
La.	9	13	—	1	2	—	—	—	7	12
Okla.	3	1	1	—	—	—	—	—	2	1
Tex.	8	24	—	—	—	—	—	—	8	24
MOUNTAIN	19	23	—	—	2	2	—	—	17	21
Mont.	—	1	—	—	—	—	—	—	—	1
Idaho	1	2	—	—	—	—	—	—	1	2
Wyo.	—	2	—	—	—	—	—	—	—	2
Colo.	7	8	—	—	—	—	—	—	7	8
N. Mex.	—	3	—	—	—	1	—	—	—	2
Ariz.	7	4	—	—	2	—	—	—	5	4
Utah	2	1	—	—	—	—	—	—	2	1
Nev.	2	2	—	—	—	1	—	—	2	1
PACIFIC	69	110	—	—	3	1	—	—	66	109
Wash.	10	5	—	—	3	1	—	—	7	4
Oreg.	15	26	—	—	—	—	—	—	15	26
Calif.	39	75	—	—	—	—	—	—	39	75
Alaska	1	1	—	—	—	—	—	—	1	1
Hawaii	4	3	—	—	—	—	—	—	4	3
Guam	—	—	—	—	—	—	—	—	—	—
P.R.	—	1	—	—	—	—	—	—	—	1
V.I.	—	—	—	—	—	—	—	—	—	—
Amer. Samoa	—	—	—	—	—	—	—	—	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—

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TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	Pertussis		Rabies, animal		Rocky Mountain spotted fever		Salmonellosis		Shigellosis	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	3,167	1,806	746	1,146	120	109	4,420	5,181	1,768	2,386
NEW ENGLAND	159	352	138	77	1	4	256	239	39	48
Maine	6	—	8	10	N	N	15	9	—	—
N.H.	—	8	2	5	—	—	15	14	3	3
Vt.	41	13	7	4	—	—	18	10	2	—
Mass.	107	313	98	29	—	4	137	149	25	33
R.I.	5	7	2	3	1	—	11	12	1	1
Conn.	—	11	21	26	—	—	60	45	8	11
MID. ATLANTIC	376	504	102	121	7	10	477	714	177	243
Upstate N.Y.	130	320	53	56	—	—	122	132	51	87
N.Y. City	5	43	6	1	1	3	130	235	66	74
N.J.	47	64	N	N	2	—	74	153	48	53
Pa.	194	77	43	64	4	7	151	194	12	29
E.N. CENTRAL	851	280	7	3	2	—	418	843	97	215
Ohio	471	96	4	2	2	—	150	188	12	43
Ind.	64	7	1	1	—	—	38	67	13	19
Ill.	10	2	2	—	—	—	18	296	4	101
Mich.	38	23	—	—	—	—	101	138	54	28
Wis.	268	152	—	—	—	—	111	154	14	24
W.N. CENTRAL	383	90	47	78	5	2	328	284	139	66
Minn.	92	14	12	9	—	—	82	63	8	11
Iowa	43	22	12	9	—	—	62	56	19	11
Mo.	98	43	5	2	5	2	93	83	81	21
N. Dak.	14	3	1	11	—	—	6	6	2	1
S. Dak.	1	1	5	13	—	—	27	12	6	1
Nebr.	55	—	—	15	—	—	25	26	18	3
Kans.	80	7	12	19	—	—	33	38	5	18
S. ATLANTIC	232	90	215	578	85	79	1,379	1,130	321	672
Del.	1	—	—	9	—	2	1	7	—	2
Md.	41	29	52	63	5	2	106	85	17	24
D.C.	—	4	—	—	—	—	8	6	2	10
Va.	56	19	65	85	—	—	164	109	19	19
W. Va.	3	—	2	13	1	—	15	20	—	—
N.C.	21	17	86	120	65	66	265	162	28	110
S.C.	68	5	5	16	2	3	69	62	19	80
Ga.	6	3	—	65	9	4	238	181	99	132
Fla.	36	13	5	207	3	2	513	498	137	295
E.S. CENTRAL	85	26	15	56	2	10	223	285	186	132
Ky.	20	3	—	3	—	—	31	37	15	21
Tenn.	36	15	—	36	1	3	89	87	108	53
Ala.	23	4	15	13	1	1	84	107	50	41
Miss.	6	4	—	4	—	6	19	54	13	17
W.S. CENTRAL	53	31	174	199	1	1	269	459	373	558
Ark.	9	7	10	8	—	—	46	43	14	11
La.	1	2	—	—	1	1	58	51	24	53
Okla.	—	2	15	18	—	—	38	45	96	80
Tex.	43	20	149	173	—	—	127	320	239	414
MOUNTAIN	732	189	33	17	15	—	323	396	116	173
Mont.	192	4	—	2	—	—	17	19	—	3
Idaho	34	13	—	—	—	—	12	31	—	1
Wyo.	6	2	4	—	—	—	7	7	—	1
Colo.	331	92	—	—	—	—	78	95	16	29
N. Mex.	25	27	—	—	—	—	19	41	13	39
Ariz.	55	34	29	15	13	—	125	147	59	78
Utah	80	17	—	—	2	—	33	36	9	9
Nev.	9	—	—	—	—	—	32	20	19	13
PACIFIC	296	244	15	17	2	3	747	831	320	279
Wash.	58	64	—	—	—	—	55	42	9	12
Oreg.	156	45	—	—	—	2	31	64	13	15
Calif.	50	131	14	16	2	1	602	647	288	237
Alaska	11	1	1	1	—	—	10	21	3	3
Hawaii	21	3	—	—	—	—	49	57	7	12
Guam	—	—	—	—	—	—	—	6	—	12
P.R.	—	1	15	14	N	N	20	35	—	1
V.I.	—	—	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U	—	U

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* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	Streptococcal disease, invasive, group A		*Streptococcus pneumoniae*, invasive disease				Syphilis			
			Drug resistant, all ages		Age <5 years		Primary & secondary		Congenital	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	1,045	1,226	612	635	151	174	1,233	1,486	49	92
NEW ENGLAND	37	64	2	4	15	21	40	23	—	—
Maine	2	2	N	N	—	—	1	—	—	—
N.H.	3	6	—	—	—	N	3	1	—	—
Vt.	5	1	2	2	1	—	—	—	—	—
Mass.	24	53	—	1	14	20	34	11	—	—
R.I.	3	2	—	1	—	1	1	1	—	—
Conn.	—	—	—	—	U	U	1	10	—	—
MID. ATLANTIC	201	200	62	40	31	21	143	200	12	17
Upstate N.Y.	76	62	24	15	21	12	13	8	9	1
N.Y. City	16	41	U	U	U	U	97	126	2	6
N.J.	41	43	N	N	2	1	20	34	1	9
Pa.	68	54	38	25	8	8	13	32	—	1
E.N. CENTRAL	139	264	121	154	34	47	107	161	2	18
Ohio	45	71	89	121	22	24	49	47	—	1
Ind.	26	20	32	33	6	8	10	9	—	1
Ill.	2	76	—	—	2	—	33	68	1	3
Mich.	61	77	—	N	—	N	11	31	—	13
Wis.	5	20	N	N	4	15	4	6	1	—
W.N. CENTRAL	64	90	13	5	17	14	31	36	—	—
Minn.	22	39	—	—	9	7	1	5	—	—
Iowa	N	N	N	N	—	N	—	1	—	—
Mo.	21	18	12	4	—	3	27	22	—	—
N. Dak.	1	3	—	—	1	—	—	—	—	—
S. Dak.	5	6	1	1	—	—	—	—	—	—
Nebr.	7	6	—	—	2	2	1	5	—	—
Kans.	8	18	N	N	5	2	2	3	—	—
S. ATLANTIC	232	240	290	302	19	12	348	370	9	13
Del.	—	—	—	2	—	N	2	2	—	—
Md.	77	57	—	—	17	9	68	58	4	3
D.C.	2	2	3	3	1	3	27	16	—	1
Va.	10	12	N	N	—	N	19	5	2	1
W. Va.	6	8	14	28	1	—	2	2	—	—
N.C.	25	32	N	N	U	U	51	32	1	—
S.C.	4	18	—	17	—	N	14	27	—	2
Ga.	45	55	113	89	—	N	16	66	—	1
Fla.	63	56	160	163	—	N	149	162	2	5
E.S. CENTRAL	40	63	43	50	—	—	82	80	10	3
Ky.	11	22	7	10	N	N	6	14	—	—
Tenn.	29	41	36	40	—	N	30	34	8	1
Ala.	—	—	—	—	—	N	39	23	2	1
Miss.	—	—	—	—	—	—	7	9	—	1
W.S. CENTRAL	39	100	38	25	22	43	218	227	12	21
Ark.	6	3	6	3	2	4	11	13	—	3
La.	3	1	32	22	6	10	12	42	—	—
Okla.	21	15	N	N	8	15	11	6	1	2
Tex.	9	81	N	N	6	14	184	166	11	16
MOUNTAIN	202	84	24	12	13	16	62	77	4	3
Mont.	—	—	—	—	—	—	4	—	—	—
Idaho	1	2	N	N	—	N	6	6	—	—
Wyo.	1	3	6	4	—	—	—	1	—	—
Colo.	88	23	N	N	12	15	1	14	—	—
N. Mex.	14	30	—	5	—	—	6	21	—	1
Ariz.	80	18	N	N	—	N	28	31	4	2
Utah	18	8	17	1	1	1	1	2	—	—
Nev.	—	—	1	2	—	—	16	2	—	—
PACIFIC	91	121	19	43	—	—	202	312	—	17
Wash.	N	N	N	N	N	N	30	14	—	—
Oreg.	N	N	N	N	—	N	2	9	—	—
Calif.	67	94	N	N	—	N	168	286	—	17
Alaska	—	—	—	—	—	N	—	—	—	—
Hawaii	24	27	19	43	—	—	2	3	—	—
Guam	—	—	—	—	—	—	—	—	—	—
P.R.	N	N	N	N	—	N	26	22	3	2
V.I.	—	—	—	—	—	—	—	4	—	—
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 19, 2005, and March 20, 2004 (11th Week)*

Reporting area	Tuberculosis		Typhoid fever		Varicella (chickenpox)		West Nile virus disease†		
							Neuroinvasive		Non-neuroinvasive§
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005
UNITED STATES	1,272	2,115	31	54	4,848	4,339	—	—	—
NEW ENGLAND	52	63	1	7	90	187	—	—	—
Maine	—	—	—	—	75	21	—	—	—
N.H.	3	—	—	—	—	—	—	—	—
Vt.	—	—	—	—	14	166	—	—	—
Mass.	37	36	—	6	1	—	—	—	—
R.I.	—	11	—	1	—	—	—	—	—
Conn.	12	16	1	—	—	—	—	—	—
MID. ATLANTIC	373	320	10	13	975	10	—	—	—
Upstate N.Y.	36	36	2	—	—	—	—	—	—
N.Y. City	208	182	1	5	—	—	—	—	—
N.J.	78	61	3	5	—	—	—	—	—
Pa.	51	41	4	3	975	10	—	—	—
E.N. CENTRAL	218	168	1	3	1,808	1,683	—	—	—
Ohio	40	36	—	1	361	444	—	—	—
Ind.	22	34	1	—	N	N	—	—	—
Ill.	122	75	—	—	2	—	—	—	—
Mich.	19	10	—	2	1,323	1,071	—	—	—
Wis.	15	13	—	—	122	168	—	—	—
W.N. CENTRAL	71	56	1	1	40	84	—	—	—
Minn.	21	20	1	1	—	—	—	—	—
Iowa	7	7	—	—	N	N	—	—	—
Mo.	26	17	—	—	2	2	—	—	—
N. Dak.	1	2	—	—	9	62	—	—	—
S. Dak.	4	2	—	—	29	20	—	—	—
Nebr.	1	2	—	—	—	—	—	—	—
Kans.	11	6	—	—	—	—	—	—	N
S. ATLANTIC	258	382	4	8	448	401	—	—	—
Del.	—	5	—	—	1	—	—	—	—
Md.	43	33	1	2	—	—	—	—	—
D.C.	21	4	—	—	5	6	—	—	—
Va.	—	28	—	2	37	50	—	—	—
W. Va.	7	5	—	—	338	277	—	—	N
N.C.	26	24	1	2	—	N	—	—	—
S.C.	32	16	—	—	67	68	—	—	—
Ga.	4	140	1	—	—	—	—	—	—
Fla.	125	127	1	2	—	—	—	—	—
E.S. CENTRAL	91	92	1	—	—	—	—	—	—
Ky.	21	9	1	—	N	N	—	—	—
Tenn.	57	31	—	—	—	—	—	—	—
Ala.	13	30	—	—	—	—	—	—	—
Miss.	—	22	—	—	—	—	—	—	—
W.S. CENTRAL	37	388	2	5	641	1,349	—	—	—
Ark.	17	23	—	—	—	—	—	—	—
La.	—	—	—	—	5	33	—	—	—
Okla.	20	27	—	—	—	—	—	—	—
Tex.	—	338	2	5	636	1,316	—	—	—
MOUNTAIN	27	65	1	2	846	625	—	—	—
Mont.	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—	—
Wyo.	—	—	—	—	32	13	—	—	—
Colo.	8	18	—	—	596	458	—	—	—
N. Mex.	1	5	—	—	45	22	—	—	—
Ariz.	15	24	1	1	—	—	—	—	—
Utah	3	11	—	1	173	132	—	—	—
Nev.	—	7	—	—	—	—	—	—	—
PACIFIC	145	581	10	15	—	—	—	—	—
Wash.	46	43	—	1	N	N	—	—	—
Oreg.	21	15	1	1	—	—	—	—	—
Calif.	50	490	5	8	—	—	—	—	—
Alaska	3	7	—	—	—	—	—	—	—
Hawaii	25	26	4	5	—	—	—	—	—
Guam	—	12	—	—	—	17	—	—	—
P.R.	—	5	—	—	38	83	—	—	—
V.I.	—	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U	—
C.N.M.I.	—	U	—	U	—	U	—	U	—

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.

* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

† Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases (ArboNet Surveillance).

§ Not previously notifiable.

TABLE III. Deaths in 122 U.S. cities,* week ending March19, 2005 (11th Week)

Reporting Area	All causes, by age (years)						P&I† Total
	All Ages	≥65	45–64	25–44	1–24	<1	
NEW ENGLAND	611	434	105	36	21	13	70
Boston, Mass.	194	126	37	11	12	8	19
Bridgeport, Conn.	30	17	6	3	3	1	3
Cambridge, Mass.	18	12	3	1	1	—	1
Fall River, Mass.	34	30	4	—	—	—	5
Hartford, Conn.	67	46	16	3	2	—	9
Lowell, Mass.	32	26	4	2	—	—	5
Lynn, Mass.	16	11	4	—	—	—	2
New Bedford, Mass.	24	19	1	4	—	—	2
New Haven, Conn.	U	U	U	U	U	U	U
Providence, R.I.	57	40	11	3	—	3	2
Somerville, Mass.	5	5	—	—	—	—	1
Springfield, Mass.	43	30	6	5	2	—	11
Waterbury, Conn.	24	21	2	1	—	—	4
Worcester, Mass.	67	51	11	3	1	1	6
MID. ATLANTIC	2,494	1,759	499	152	40	43	173
Albany, N.Y.	45	31	9	—	3	2	3
Allentown, Pa.	33	29	4	—	—	—	3
Buffalo, N.Y.	104	79	16	4	1	4	13
Camden, N.J.	19	12	3	4	—	—	1
Elizabeth, N.J.	24	15	7	1	—	1	3
Erie, Pa.	47	36	8	3	—	—	4
Jersey City, N.J.	37	25	8	2	1	1	—
New York City, N.Y.	1,290	913	259	79	22	16	86
Newark, N.J.	38	21	11	4	1	1	2
Paterson, N.J.	30	14	7	7	—	2	—
Philadelphia, Pa.	384	248	90	27	8	11	22
Pittsburgh, Pa.§	31	21	8	—	1	1	2
Reading, Pa.	33	25	5	3	—	—	4
Rochester, N.Y.	168	135	26	5	—	2	22
Schenectady, N.Y.	18	16	2	—	—	—	3
Scranton, Pa.	38	34	4	—	—	—	1
Syracuse, N.Y.	90	65	17	6	1	1	4
Trenton, N.J.	38	20	10	6	1	1	—
Utica, N.Y.	14	11	1	1	1	—	—
Yonkers, N.Y.	13	9	4	—	—	—	—
E.N. CENTRAL	2,514	1,738	525	143	49	56	220
Akron, Ohio	63	42	10	7	1	3	12
Canton, Ohio	43	33	9	—	—	1	7
Chicago, Ill.	387	244	93	29	8	10	33
Cincinnati, Ohio	94	65	17	5	5	2	4
Cleveland, Ohio	256	206	35	8	3	4	11
Columbus, Ohio	272	190	59	13	4	6	36
Dayton, Ohio	183	132	33	10	5	3	22
Detroit, Mich.	219	124	69	12	7	7	10
Evansville, Ind.	50	39	7	2	1	1	5
Fort Wayne, Ind.	77	52	15	5	3	2	6
Gary, Ind.	16	3	8	3	1	1	1
Grand Rapids, Mich.	107	80	15	6	1	5	10
Indianapolis, Ind.	229	142	58	18	6	5	14
Lansing, Mich.	44	34	7	2	1	—	8
Milwaukee, Wis.	120	80	27	10	1	2	19
Peoria, Ill.	55	37	12	2	1	3	3
Rockford, Ill.	58	44	10	4	—	—	4
South Bend, Ind.	45	32	10	3	—	—	1
Toledo, Ohio	127	102	21	3	—	1	7
Youngstown, Ohio	69	57	10	1	1	—	7
W.N. CENTRAL	618	426	115	46	13	17	54
Des Moines, Iowa	107	86	15	2	2	2	14
Duluth, Minn.	31	25	3	1	1	1	1
Kansas City, Kans.¶	3	1	—	1	1	—	1
Kansas City, Mo.	88	57	18	7	2	4	7
Lincoln, Nebr.	54	39	11	3	1	—	3
Minneapolis, Minn.	69	43	14	7	1	4	4
Omaha, Nebr.	112	77	21	10	2	2	15
St. Louis, Mo.	67	48	10	5	—	3	3
St. Paul, Minn.	71	48	16	6	1	—	4
Wichita, Kans.¶	16	2	7	4	2	1	2
S. ATLANTIC	1,241	838	268	82	30	22	91
Atlanta, Ga.	119	68	37	9	3	2	1
Baltimore, Md.	163	100	43	15	4	1	23
Charlotte, N.C.	121	90	18	6	2	5	15
Jacksonville, Fla.	176	112	41	16	5	2	11
Miami, Fla.	90	65	18	3	4	—	9
Norfolk, Va.	61	50	8	2	—	1	3
Richmond, Va.	71	36	22	8	4	1	7
Savannah, Ga.	62	49	6	3	1	3	2
St. Petersburg, Fla.	43	30	9	2	2	—	2
Tampa, Fla.	221	168	34	9	4	5	15
Washington, D.C.	100	62	26	9	1	2	—
Wilmington, Del.	14	8	6	—	—	—	3
E.S. CENTRAL	1,047	704	255	53	21	14	83
Birmingham, Ala.	190	131	42	9	5	3	17
Chattanooga, Tenn.	104	78	20	5	1	—	7
Knoxville, Tenn.	140	101	31	6	1	1	4
Lexington, Ky.	107	70	29	5	1	2	8
Memphis, Tenn.	179	106	52	13	6	2	14
Mobile, Ala.	138	94	33	8	1	2	8
Montgomery, Ala.	59	38	14	3	2	2	10
Nashville, Tenn.	130	86	34	4	4	2	15
W.S. CENTRAL	1,611	1,075	339	120	47	30	107
Austin, Tex.	81	56	19	3	2	1	6
Baton Rouge, La.	50	35	8	3	2	2	—
Corpus Christi, Tex.	62	44	11	5	1	1	8
Dallas, Tex.	247	129	62	37	8	11	21
El Paso, Tex.	96	70	18	3	4	1	10
Ft. Worth, Tex.	118	76	32	9	—	1	5
Houston, Tex.	336	214	80	24	13	5	28
Little Rock, Ark.	76	53	15	4	3	1	—
New Orleans, La.	U	U	U	U	U	U	U
San Antonio, Tex.	290	202	51	23	11	3	20
Shreveport, La.	91	66	13	7	1	4	9
Tulsa, Okla.	164	130	30	2	2	—	—
MOUNTAIN	1,225	824	262	79	40	18	85
Albuquerque, N.M.	108	80	16	9	2	1	12
Boise, Idaho	59	44	9	4	—	2	4
Colo. Springs, Colo.	81	58	13	6	3	1	5
Denver, Colo.	108	69	28	4	5	2	8
Las Vegas, Nev.	345	235	80	23	5	2	25
Ogden, Utah	23	18	2	2	1	—	1
Phoenix, Ariz.	189	115	40	17	13	2	11
Pueblo, Colo.	35	24	9	1	1	—	6
Salt Lake City, Utah	127	78	31	7	5	6	10
Tucson, Ariz.	150	103	34	6	5	2	3
PACIFIC	1,733	1,206	322	126	44	33	184
Berkeley, Calif.	15	12	3	—	—	—	—
Fresno, Calif.	82	62	15	4	1	—	5
Glendale, Calif.	27	20	3	3	1	—	1
Honolulu, Hawaii	77	53	18	5	—	1	6
Long Beach, Calif.	67	42	13	11	1	—	9
Los Angeles, Calif.	355	239	73	21	15	7	37
Pasadena, Calif.	U	U	U	U	U	U	U
Portland, Oreg.	173	114	33	14	8	4	21
Sacramento, Calif.	244	180	37	19	6	2	23
San Diego, Calif.	163	109	28	15	4	5	14
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	191	132	38	11	4	6	30
Santa Cruz, Calif.	29	20	6	2	1	—	3
Seattle, Wash.	136	89	30	11	2	4	13
Spokane, Wash.	59	46	7	2	1	3	9
Tacoma, Wash.	115	88	18	8	—	1	13
TOTAL	13,094**	9,004	2,690	837	305	246	1,067

U: Unavailable. —: No reported cases.

* Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of ≥100,000. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

† Pneumonia and influenza.

§ Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶ Because of changes in reporting methods in these cities, mortality reports from 2004 only are being reported. Mortality data for 2005 are currently not available.

** Total includes unknown ages.

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